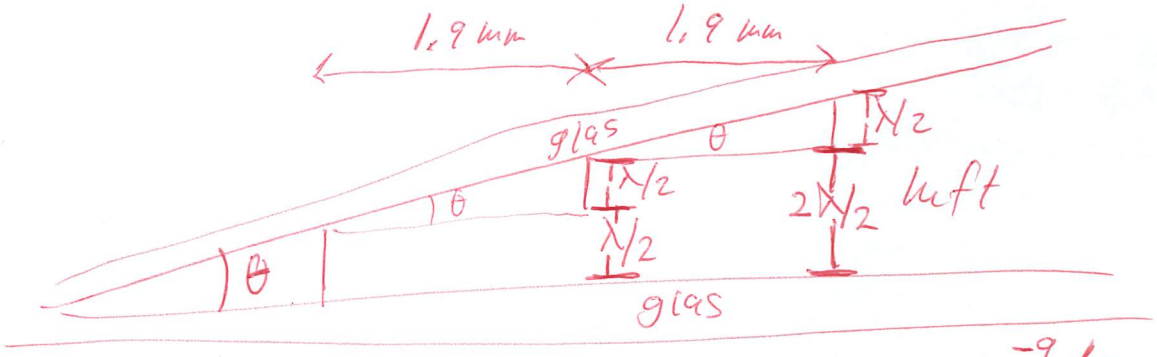
29. The (vertical) change between the center of one dark band and the next is

$$\Delta y = \frac{\lambda}{2} = \frac{420 \text{ nm}}{2} = 210 \text{ nm} = 2.10 \times 10^{-4} \text{ mm}.$$

Thus, with the (horizontal) separation of dark bands given by $\Delta x = 1.9$ mm, we have

$$\theta \approx \tan\theta = \frac{\Delta y}{\Delta x} = \frac{2.10 \times 10^{-4} \text{ mm}}{1.9 \text{ mm}} = 1.11 \times 10^{-4} \text{ rad}.$$

Converting this angle into degrees, we arrive at $\theta = 0.0063°$.



$$\tan\theta = \frac{\lambda/2}{1{,}9\,\text{mm}} = \frac{420 \cdot 10^{-9}/2}{1.9 \cdot 10^{-3}} \simeq 1.1053 \cdot 10^{-4}$$

För små vinklar i radianer gäller

$$\theta \simeq \tan\theta \simeq 1.11 \cdot 10^{-4} \text{ rad}$$